

WHAT IS CLAIMED IS:

1 1. A method of hiding an Internet Protocol (IP)
2 address of an originating IP terminal from a terminating
3 IP terminal during a multimedia session in an IP-based
4 network, said method comprising the steps of:

5 sending media data packets from the originating IP
6 terminal to an intermediate address translation function
7 in the network, said data packets including an IP address
8 of the originating IP terminal as a source address, and
9 an IP address for the address translation function as a
10 destination address;

11 receiving the media data packets from the
12 originating IP terminal in the address translation
13 function;

14 translating, by the address translation function,
15 the source address from the IP address of the originating
16 IP terminal to the IP address for the address translation
17 function;

18 translating, by the address translation function,
19 the destination address from the IP address for the
20 address translation function to an IP address for the
21 terminating IP terminal; and

22 sending the translated media data packets from the
23 address translation function to the terminating IP
24 terminal, said translated data packets including the IP

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25 address for the address translation function as a source
26 address, and the IP address for the terminating IP
27 terminal as a destination address.

1 2. The method of hiding an IP address of an
2 originating IP terminal from a terminating IP terminal of
3 claim 1 wherein the step of sending media data packets
4 from the originating IP terminal to an intermediate
5 address translation function includes sending the data
6 packets to a Media Resource Function (MRF) that includes
7 address translation tables.

1 3. The method of hiding an IP address of an
2 originating IP terminal from a terminating IP terminal of
3 claim 1 further comprising, before the step of sending
4 media data packets from the originating IP terminal to
5 the intermediate address translation function, the step
6 of sending the IP address for the address translation
7 function to the originating IP terminal and the
8 terminating IP terminal during setup of the multimedia
9 session.

1 4. The method of hiding an IP address of an
2 originating IP terminal from a terminating IP terminal of
3 claim 1 further comprising the steps of:

4 sending return media data packets from the
5 terminating IP terminal to the address translation
6 function, said return data packets including the IP
7 address for the terminating IP terminal as a source
8 address, and the IP address for the address translation
9 function as a destination address;

10 receiving the return media data packets from the
11 terminating IP terminal in the address translation
12 function;

13 translating, by the address translation function,
14 the destination address from the IP address for the
15 address translation function to the IP address for the
16 originating IP terminal; and

17 sending translated returned media data packets from
18 the address translation function to the originating IP
19 terminal, said translated returned data packets including
20 the IP address for the terminating IP terminal as a
21 source address, and the IP address for the originating IP
22 terminal as a destination address.

1 5. The method of hiding an IP address of an
2 originating IP terminal from a terminating IP terminal of
3 claim 4 further comprising the steps of:

4 sending the IP address for the address translation
5 function to the originating IP terminal during setup of
6 the multimedia session, the originating IP terminal being

7 instructed to utilize the IP address for the address
8 translation function as the destination address for the
9 media data packets; and

10 sending the IP address for the address translation
11 function to the terminating IP terminal during setup of
12 the multimedia session, the terminating IP terminal being
13 instructed to utilize the IP address for the address
14 translation function as the destination address for the
15 return media data packets.

1 6. A method of setting up a multimedia session in
2 an Internet Protocol (IP)-based network in which an IP
3 address of an originating IP terminal is hidden from a
4 terminating IP terminal, said method comprising the steps
5 of:

6 setting up an address translation function in the
7 network that includes an address translation table;

8 receiving an Invite message in the address
9 translation function that identifies an IP media address
10 of the originating IP terminal;

11 receiving a response message in the address
12 translation function that identifies an IP media address
13 of the terminating IP terminal;

14 storing in the address translation table,
15 instructions to translate the source address in media
16 data packets having the IP media address of the

17 originating IP terminal as a source address to the IP
18 address of the address translation function, and to
19 translate the destination address to the IP media address
20 of the terminating IP terminal;

21 sending the IP address for the address translation
22 function to the originating IP terminal, the originating
23 IP terminal being instructed to utilize the IP address
24 for the address translation function as the destination
25 address for the media data packets; and

26 sending the IP address for the address translation
27 function to the terminating IP terminal, the terminating
28 IP terminal being instructed to utilize the IP address
29 for the address translation function as the destination
30 address for return media data packets.

1 7. The method of setting up a multimedia session
2 in an IP-based network of claim 6 further comprising
3 storing in the address translation table, instructions to
4 translate the destination address in media data packets
5 having the IP media address of the terminating IP
6 terminal as a source address to the IP media address of
7 the originating IP terminal while leaving the source
8 address unchanged.

1 8. The method of setting up a multimedia session
2 in an IP-based network of claim 7 further comprising
3 deleting the translation instructions from the address
4 translation table when the multimedia session is cleared.

1 9. The method of setting up a multimedia session
2 in an IP-based network of claim 6 further comprising the
3 steps of:

4 sending an Invite message from the originating IP
5 terminal to the originating IP terminal's home network;

6 determining in the originating IP terminal's home
7 network, whether the originating IP terminal subscribes
8 to a hidden identity feature; and

9 routing the origination message to the address
10 translation function, upon determining that the
11 originating IP terminal subscribes to the hidden identity
12 feature.

1 10. A method of hiding an Internet Protocol (IP)
2 address of an originating IP terminal from a terminating
3 IP terminal during a multimedia session in an IP-based
4 network, said method comprising the steps of:

5 receiving, by an address translation function in the
6 network, media data packets from the originating IP
7 terminal, said media data packets including the IP
8 address of the originating IP terminal as a source

9 address, and an IP address of the address translation
10 function as a destination address;

11 translating, by the address translation function,
12 the source address from the IP address of the originating
13 IP terminal to the IP address for the address translation
14 function; and

15 sending, by the address translation function,
16 translated media data packets to the terminating IP
17 terminal, said translated media data packets including
18 the IP address of the address translation function as the
19 source address.

1 11. The method of hiding an IP address of an
2 originating IP terminal from a terminating IP terminal of
3 claim 10 wherein the address translation function is a
4 Media Resource Function (MRF), and the method further
5 comprises setting up address translation tables in the
6 MRF.

1 12. The method of hiding an IP address of an
2 originating IP terminal from a terminating IP terminal of
3 claim 10 further comprising, before the step of receiving
4 media data packets in the address translation function
5 from the originating IP terminal, the step of sending the
6 IP address for the address translation function to the

7 originating IP terminal and the terminating IP terminal
8 during setup of the multimedia session.

1 13. The method of hiding an IP address of an
2 originating IP terminal from a terminating IP terminal of
3 claim 10 further comprising the steps of:

4 receiving, by the address translation function,
5 return media data packets from the terminating IP
6 terminal, said return media data packets including the IP
7 address for the address translation function as the
8 destination address;

9 translating, by the address translation function,
10 the IP address for the address translation function to
11 the IP address for the originating IP terminal; and

12 sending, by the address translation function,
13 translated return media data packets to the originating
14 IP terminal, said translated return media data packets
15 including the IP address for the terminating IP terminal
16 as the source address, and the IP address of the
17 originating IP terminal as the destination address.

1 14. A system for hiding an Internet Protocol (IP)
2 address of an originating IP terminal from a terminating
3 IP terminal during a multimedia session in an IP-based
4 network, said system comprising:

5 a transmitter in the originating IP terminal that
6 transmits media data packets from the originating IP
7 terminal to an intermediate address translation function
8 in the originating IP terminal's home network, said data
9 packets including the IP address of the originating IP
10 terminal as a source address, and an IP address for the
11 address translation function as a destination address;

12 an address translation table in the address
13 translation function, that translates the source address
14 from the IP address of the originating IP terminal to the
15 IP address for the address translation function, and that
16 translates the destination address from the IP address
17 for the address translation function to an IP address for
18 the terminating IP terminal; and

19 a router in the address translation function that
20 receives the media data packets from the originating IP
21 terminal, and sends translated media data packets to the
22 terminating IP terminal, said translated data packets
23 including the IP address for the address translation
24 function as the source address, and the IP address for
25 the terminating IP terminal as the destination address.

1 15. The system for hiding an IP address of an
2 originating IP terminal from a terminating IP terminal of
3 claim 14 wherein the address translation function is a
4 Media Resource Function (MRF).

1 16. The system for hiding an IP address of an
2 originating IP terminal from a terminating IP terminal of
3 claim 14 further comprising a signaling mechanism in the
4 address translation function that sends the IP address
5 for the address translation function to the originating
6 IP terminal and the terminating IP terminal during setup
7 of the multimedia session.

1 17. A system for setting up a multimedia session in
2 an Internet Protocol (IP)-based network in which an IP
3 address of an originating IP terminal is hidden from a
4 terminating IP terminal, said system comprising:

5 an address translation table in an address
6 translation function in the originating IP terminal's
7 home network, said table being indexed to recognize the
8 IP address of the originating IP terminal as a source
9 address, and in response, said table translating the
10 source address from the IP address of the originating IP
11 terminal to an IP address of the address translation
12 function; and

13 a signaling mechanism in the address translation
14 function for:

15 obtaining an IP address of the terminating IP
16 terminal;

17 sending the IP address for the address
18 translation function to the originating IP terminal, the
19 originating IP terminal being instructed to utilize the
20 IP address for the address translation function as the
21 destination address for the media data packets; and

22 sending the IP address for the address
23 translation function to the terminating IP terminal, the
24 terminating IP terminal being instructed to utilize the
25 IP address for the address translation function as the
26 destination address for return media data packets.

1 18. The system for setting up a multimedia session
2 of claim 17 further comprising:

3 a transmitter in the originating IP terminal for
4 sending an origination message from the originating IP
5 terminal to the originating IP terminal's home network;
6 and

7 a Serving Call State Control Function (S-CSCF) in
8 the originating IP terminal's home network that
9 determines whether the originating IP terminal subscribes
10 to a hidden identity feature, and that routes the
11 origination message to the address translation function,
12 upon determining that the originating IP terminal
13 subscribes to the hidden identity feature.

1 19. An address translation function in an Internet
2 Protocol (IP)-based network for hiding an address of an
3 originating IP terminal from a terminating IP terminal
4 during a multimedia session, said address translation
5 function comprising:

6 a signaling mechanism that sends an IP address of
7 the address translation function to the originating IP
8 terminal and the terminating IP terminal during setup of
9 the multimedia session;

10 a router that receives media data packets from the
11 originating IP terminal, said media data packets
12 including the IP address of the originating IP terminal
13 as a source address, and the IP address of the address
14 translation function as a destination address, said
15 router also sending translated media data packets to the
16 terminating IP terminal, said translated media data
17 packets including the IP address of the address
18 translation function as the source address; and

19 an address translation table that translates the
20 source address in the media data packets from the IP
21 address of the originating IP terminal to the IP address
22 for the address translation function, and translates the
23 destination address from the IP address of the address
24 translation function to the IP address of the terminating
25 IP terminal.

1 20. The address translation function of claim 19
2 wherein the router also receives return media data
3 packets from the terminating IP terminal, said return
4 media data packets including the IP address of the
5 terminating IP terminal as a source address, and the IP
6 address of the address translation function as a
7 destination address, said router also sending translated
8 return media data packets to the originating IP terminal,
9 said translated return media data packets including the
10 IP address of the terminating IP terminal as the source
11 address, and the IP address of the originating IP
12 terminal as a destination address.

1 21. The address translation function of claim 19
2 wherein the address translation table leaves the source
3 address in the return media data packets unchanged, and
4 translates the destination address in the return media
5 data packets from the IP address of the address
6 translation function to the IP address of the originating
7 IP terminal.

1 22. A method of hiding an Internet Protocol (IP)
2 address of a terminating IP terminal from an originating
3 IP terminal during a multimedia session in an IP-based
4 network, said method comprising the steps of:

5 receiving, by an address translation function in the
6 home network of the terminating IP terminal, media data
7 packets from the originating IP terminal, said media data
8 packets including the IP address of the originating IP
9 terminal as a source address, and an IP address of the
10 address translation function as a destination address;
11 translating, by the address translation function,
12 the destination address from the IP address of the
13 address translation function to the IP address of the
14 terminating IP terminal;
15 sending, by the address translation function,
16 translated media data packets to the terminating IP
17 terminal;
18 receiving, by the address translation function,
19 return media data packets from the terminating IP
20 terminal, said return media data packets including the IP
21 address of the terminating IP terminal as a source
22 address, and the IP address of the address translation
23 function as a destination address;
24 translating, by the address translation function,
25 the destination address in the return media data packets
26 from the IP address of the address translation function
27 to the IP address of the originating IP terminal;
28 translating, by the address translation function,
29 the source address in the return media data packets from

30 the IP address of the terminating IP terminal to the IP
31 address of the address translation function; and
32 sending, by the address translation function,
33 translated return media data packets to the originating
34 IP terminal, said translated media data packets including
35 the IP address of the address translation function as the
36 source address.

1 23. A method of hiding an Internet Protocol (IP)
2 address of an originating IP terminal from a terminating
3 IP terminal, and hiding an IP address of the terminating
4 IP terminal from the originating IP terminal during a
5 multimedia session in an IP-based network, said method
6 comprising the steps of:

7 receiving, by a first address translation function
8 in a home network of the originating IP terminal, media
9 data packets from the originating IP terminal, said media
10 data packets including the IP address of the originating
11 IP terminal as a source address, and an IP address of the
12 first address translation function as a destination
13 address;

14 translating, by the first address translation
15 function, the source address from the IP address of the
16 originating IP terminal to the IP address of the first
17 address translation function;

18 translating, by the first address translation
19 function, the destination address from the IP address of
20 the first address translation function to the IP address
21 of a second address translation function in a home
22 network of the terminating IP terminal;

23 sending, by the first address translation function,
24 translated media data packets to the second address
25 translation function, said translated media data packets
26 including the IP address of the first address translation
27 function as the source address;

28 translating, by the second address translation
29 function, the source address from the IP address of the
30 first address translation function to the IP address of
31 the second address translation function;

32 translating, by the second address translation
33 function, the destination address from the IP address of
34 the second address translation function to the IP address
35 of the terminating IP terminal;

36 sending, by the second address translation function,
37 twice translated media data packets to the terminating IP
38 terminal, said twice translated media data packets
39 including the IP address of the second address
40 translation function as the source address;

41 receiving, by the second address translation
42 function, return media data packets from the terminating
43 IP terminal, said return media data packets including the

44 IP address of the terminating IP terminal as a source
45 address, and the IP address of the second address
46 translation function as a destination address;
47 translating, by the second address translation
48 function, the source address in the return media data
49 packets from the IP address of the terminating IP
50 terminal to the IP address of the second address
51 translation function;
52 translating, by the second address translation
53 function, the destination address in the return media
54 data packets from the IP address of the second address
55 translation function to the IP address of the first
56 address translation function;
57 sending, by the second address translation function,
58 translated return media data packets to the first address
59 translation function, said translated return media data
60 packets including the IP address of the second address
61 translation function as the source address;
62 translating, by the first address translation
63 function, the source address in the translated return
64 media data packets from the IP address of the second
65 address translation function to the IP address of the
66 first address translation function;
67 translating, by the first address translation
68 function, the destination address in the translated
69 return media data packets from the IP address of the

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70 first address translation function to the IP address of
71 the originating IP terminal; and
72 sending, by the first address translation function,
73 twice translated return media data packets to the
74 originating IP terminal, said twice translated media data
75 packets including the IP address of the first address
76 translation function as the source address.

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